99.54
F762P
no.56

FOREST STATISTICS FOR WASCO COUNTY, OREGON FROM THE INVENTORY PHASE OF THE FOREST SURVEY

U. S. Forest Service.
Pacific Northwest Forest Experiment Station

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FOREST STATISTICS
FOR
WASCO COUNTY, OREGON

FROM THE INVENTORY PHASE OF THE FOREST SURVEY

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U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION
THORNTON T. MUNGER DIRECTOR

H. J. ANDREWS, IN CHARGE OF FOREST SURVEY R. W. COWLIN, ASSISTANT

PAUL D. KEMP, IN CHARGE OF FIELD AND OFFICE WORK
IN WASCO COUNTY

PORTLAND, OREGON MARCH 1, 1936

CALIFORNIA FOREST & RANGE EXPERIMENT STA.
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BERKELEY, CALIFORNIA

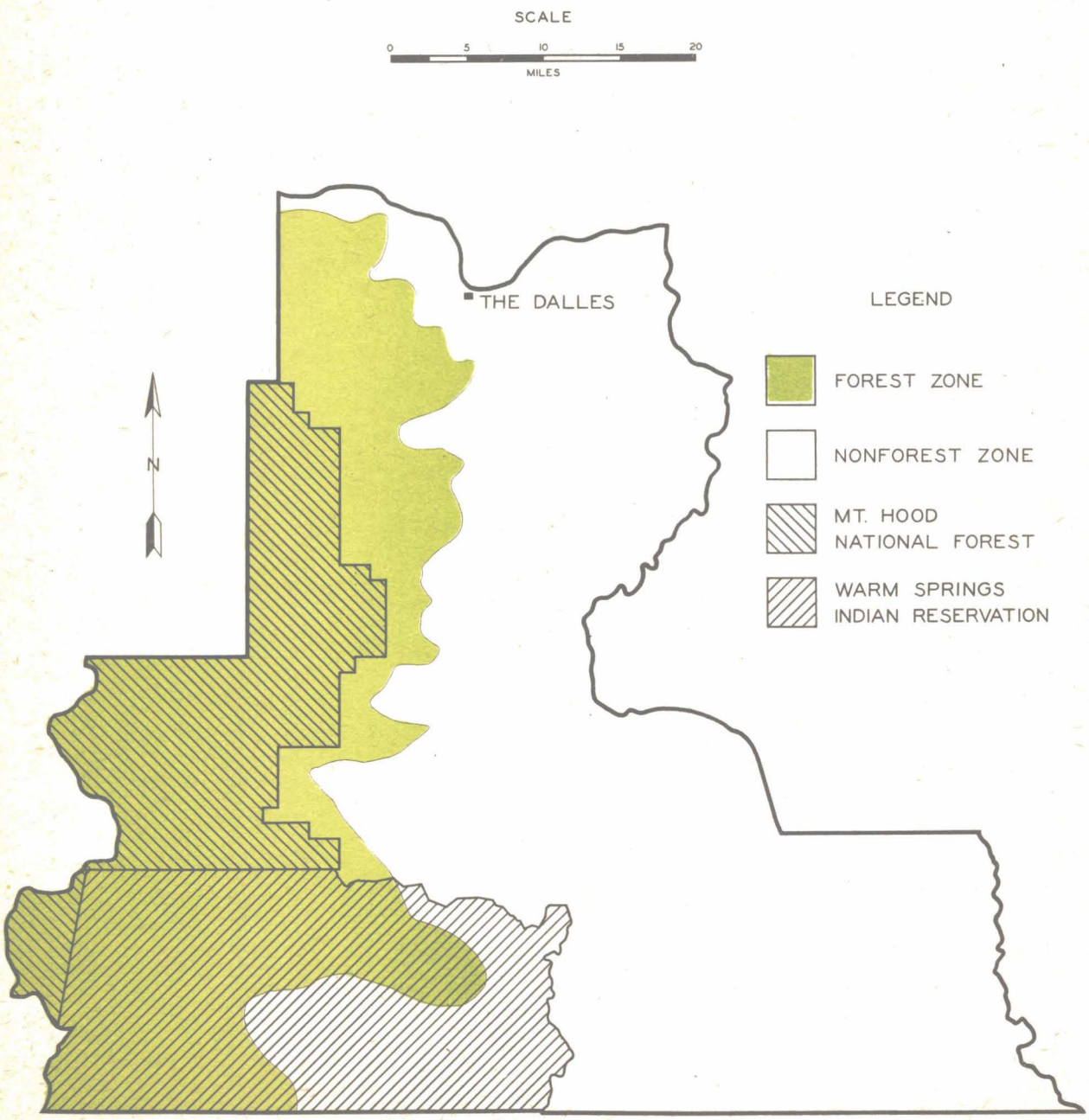
FIGURE 1

OUTLINE MAP

OF

WASCO COUNTY OREGON

1936



FOREST STATISTICS OF WASCO COUNTY, OREGON

By Paul D. Kemp[1/]

This report presents the results of a forest survey made during 1933 and 1934 by the Forest Service as a part of a national study of forest resources. It is preliminary and gives only statistics of the forest inventory of Wasco County, Oregon[2/], using 4 tables and 4 figures. The methods of the survey, and detailed definitions of types are contained in "The Forest Survey of Eastern Oregon and Eastern Washington", an explanatory text which should be read in connection with the forest statistics for this and other counties in eastern Oregon and eastern Washington.

Location and Description of County

Wasco County is located in north-central Oregon. It extends from the Columbia River south 60 miles across the east slope of the Cascade Range and the "high desert". Its eastern boundary is formed principally by the Deschutes and John Day Rivers. The county has an area of approximately 1,499,520 acres. It was the first county established in eastern Oregon, and originally included the whole of the State's area east of the Cascade Divide.

The topography of the western part of the county is mountainous and is featured by numerous sharp peaks, narrow ridges, and deep valleys. The most rugged topography is that of the west-central portion, which borders Mount Hood. The southeastern two-thirds of the county is an arid plateau, broken by rolling hills and occasional peaks and by numerous deep canyons. Elevations within the county average about 1,800 feet and range from 95 feet along the Columbia River to about 5,700 feet at Flag Point.

1/ THE FIELD WORK OF THE FOREST SURVEY OF WASCO COUNTY WAS DONE BY PAUL D. KEMP, CLAUDE KERR, V. H. HARLESS, AND A. D. THRANE. THE DATA WERE COMPILED BY A. W. HODGMAN, F. H. VOGEL, R. W. TAYLOR, W. E. PELTO, AND C. W. CHELLQUIST.

2/ OREGON AND WASHINGTON WERE DIVIDED FOR PURPOSES OF THE SURVEY INTO TWO REGIONS, (1) THE DOUGLAS FIR REGION, CONSISTING OF THAT PART OF BOTH STATES WEST OF THE SUMMIT OF THE CASCADE RANGE, AND (2) EASTERN OREGON AND EASTERN WASHINGTON, CONSISTING OF THAT PART OF BOTH STATES EAST OF THE SUMMIT OF THE CASCADE RANGE. EACH REGION WAS DIVIDED INTO FOREST SURVEY UNITS COMPOSED OF ONE OR MORE COUNTIES. AT A LATER DATE A REPORT WILL BE ISSUED FOR EACH FOREST UNIT PRESENTING DETAILED INVENTORY SUMMARIES, A TEXTUAL DESCRIPTION OF THE UNIT, AND STATISTICS OF GROWTH AND DEPLETION ANALYZED IN THE LIGHT OF THE INVENTORY. FINALLY, A REGIONAL REPORT WILL BE ISSUED WHICH WILL SUMMARIZE THE UNIT REPORTS AND DISCUSS THEIR FINDINGS IN RELATION TO THE REGION AS A WHOLE. THE REGIONAL REPORT WILL INCLUDE AN INTERPRETATION OF THE FOREST SURVEY DATA AS RELATED TO DATA ON OTHER ECONOMIC FACTORS AND A COMPREHENSIVE ANALYSIS OF THE FOREST SITUATION FROM AN ECONOMIC AS WELL AS A PHYSICAL STANDPOINT.

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The Deschutes River and its most important tributaries, White River and Warm Springs River, are the principal streams within the county. A small area in the southeastern part is drained by the John Day River and a portion of the northwestern part, composing about 25 percent of the county area, is drained by creeks flowing directly into the Columbia River. The Deschutes River has cut a canyon across the county approximately 1,200 feet deep. This river is remarkable for its uniform flow.

According to Bureau of the Census data the population of Wasco County in 1930 was 12,646, as compared with 16,336 in 1910 and 13,648 in 1920. This averages about 5 persons per square mile. The Dalles, located on the Columbia River, is the county seat and only city. In 1930 it had a population of 5,885, approximately 47 percent of the county's total. The principal towns are Dufur, Maupin, Mosier, Antelope, and Friend. The Dalles and Maupin have gained in population since 1920, but all the other towns have lost materially.

Transportation facilities include a trunk-line railroad along the Columbia River and one along the Deschutes River, approximately 1,700 miles of improved roads, and yearlong navigation by river boats on the Columbia River. Two primary highways, Columbia River and The Dalles-California, traverse the county; the Wapanitia Highway, connecting with the latter at Maupin, provides a short route across the mountains to Portland throughout the year. Completion of Bonneville Dam, scheduled for 1937, will make the Columbia River navigable to seacraft from the dam to The Dalles. The dam is being built with locks for seacraft, and the Army Engineers have reported favorably on the construction of a ship channel from the port of Vancouver to the dam.

There is a wide difference in climatic conditions within the county. The eastern two-thirds is arid and is featured by extreme temperatures. Humid conditions and cool summer temperatures prevail in the western portion. Annual precipitation since 1850 has averaged about 17 inches, ranging from 9 to 29 inches at The Dalles. In the eastern portion of the county it has averaged about 12 inches, and in the western portion about 40 inches.

Character of vegetative growth shows a wide variation corresponding with the variation in climatic conditions. Approximately 66 percent of the county (table 4 and figure 4) has been classified by the forest survey as nonforest land, of which apparently only a very small percentage ever supported tree growth. The nonforest land includes 171,437 acres listed on the county assessment rolls in 1934 as tillable. It is estimated that tillable land on the Warm Springs Indian Reservation, not carried on the assessment rolls, amounts to about 5,000 acres, bringing the total of tillable land to about 176,000 acres. The remaining nonforest land, totaling approximately 813,000 acres, or 55 percent of the county's area, is now, and probably will remain, suitable chiefly for grazing.

Forest Land Area and Forest Types

The forest land of Wasco County totals 511,025 acres (table 4), or approximately 34 percent of the county area. It forms a relatively narrow zone extending across the western part of the county (figure 1), chiefly within the Mount Hood National Forest and the Warm Springs Indian Reservation. The humid western part of this zone is occupied by forest stands characteristic of western Oregon in which balsam firs, hemlocks, and Douglas fir predominate; the semi-arid eastern part is occupied by the typical ponderosa pine forests and the woodland types composed of ponderosa pine, oak, and juniper.[3/]

Tables 2 and 3 and figure 3 show the distribution of the forest-land area among the 6 ownership classes. Approximately 40 percent is national-forest land, 31 percent is a part of the Warm Springs Indian Reservation, and 26 percent is privately owned. The remaining 3 percent consists of public domain, State, county, and municipal lands.

Ponderosa Pine Saw-Timber Types

The five ponderosa pine saw-timber types occupy a total of 297,865 acres, about 58 percent of the forest area (table 3 and figure 4). They compose the most accessible and the most valuable forests in the county.

Forests containing from 50 to 80 percent ponderosa pine by volume (type 20, table 2) are the most extensive in the county, totaling 100,595 acres. They occur principally along the upper edge of the pine zone. Ponderosa pine, on an average, constitutes about 60 percent of the volume; the principal associate species, ranked by volume, are Douglas fir, white fir, western larch, and lodgepole pine. Frequently these companion species are concentrated on the north slopes and stream bottoms and pure pine stands occur on the south slopes in stringers too narrow to map.

Pure ponderosa pine forests (type 20.5), containing on the average 80 percent or more of ponderosa pine, rank second in area, totaling 90,420 acres, and first in economic importance. They occupy a zone about 12 miles wide between the mixed pine and fir forest zone and the pine woodland zone. Ponderosa pine constitutes about 93 percent of the volume; the remainder consists of lowland white fir, Douglas fir, western larch, and incense cedar. Logging operations and fuel-wood cutting have been centered in this type, and the acreage so classified includes about 500 acres of selectively logged areas. The type area has been reduced by approximately 20,000 acres by logging.

3/ THE LOCATION AND EXTENT OF THE FOREST TYPES ARE SHOWN TO BEST ADVANTAGE BY THE FOREST SURVEY TYPE MAPS. FULL INFORMATION REGARDING THESE MAPS AND HOW THEY MAY BE OBTAINED WILL BE FURNISHED UPON REQUEST.

Pine woodland (type 5) includes the least productive coniferous areas in the county. It occurs most frequently along the edge of the desert and occasionally within the forest zone on shallow rocky soils locally known as "scab land" or on land bordering islands of nonforest land. Included in this classification are pine areas of higher quality too small to be mapped. The volume of the stands averages about 2 M board feet of ponderosa pine per acre; the associate species, oak and juniper, seldom develop into saw timber. In quality the pine varies from mediocre to poor. Trees rarely exceed 3 16-foot logs in height and are frequently too limby to qualify as saw timber. There has been considerable logging in this type, chiefly for fuel, posts, poles, and round construction timbers. The type is most susceptible to drought and to bark-beetle attack; mortality from those factors during the past decade has averaged about 50 percent of the stand.

Ponderosa pine forests averaging from 12 to 22 inches in diameter (type 21) occupy 8,605 acres from which the old growth was removed by logging and 10,900 acres on which it was for the most part killed by fire. The timber of this type is predominantly young growth, but includes some old growth occurring as residual stands on cut-over areas and as dense virgin stands on poor sites.

Ponderosa pine mixture in which ponderosa pine constitutes from 20 to 50 percent of the stand volume (type 27) is the least common of the pine types. It occupies 41,810 acres irregularly distributed through the upper altitudinal range of the pine in places where the overlap with fir is widest. Douglas fir predominates in this type, and the principal associates, in order of volume, are ponderosa pine, lowland white fir, and western larch. On the drier sites ponderosa pine occasionally predominates over small areas, but generally it occurs scattered through the stands in groups or as isolated trees.

Saw-Timber Types Other Than Ponderosa Pine

The five saw-timber types other than ponderosa pine (table 3) are in general characteristic of the upper slopes and peaks. Only three of them occupy extensive areas, and their combined area is 75,410 acres, or approximately one-fourth that of the ponderosa pine types. Stands of these types are the heaviest in the county. Their value, both present and prospective, is chiefly protective and recreational; they are of lower quality and less accessible than similar stands in the western part of the Douglas fir region.

Fir-mountain hemlock (type 23) occupies 24,925 acres, a larger area than that of any other type of this group. It occurs from about 5,000 feet to the commercial timberline, and with the exception of small areas on the slopes of Flag Point and Bonney Butte is limited to areas in the southern part of the county along the summit of the Cascade Range.

It includes pure stands of noble fir, western hemlock, mountain hemlock, and silver fir, and combinations of these species with admixtures of Douglas fir, Engelmann spruce, alpine fir, western white pine, Alaska cedar, western red cedar, and sugar pine. Predominantly, the timber of this type is dense old growth of moderate size.

The upper-slope forests (type 27.5) consist of mixtures of all but a few of the principal species common to the State, in which no single species and no recognized group of species predominates. These species, in approximate order of occurrence, are Douglas fir, lowland white fir, silver fir, western larch, mountain hemlock, western hemlock, western white pine, Engelmann spruce, noble fir, lodgepole pine, western red cedar, ponderosa pine, alpine fir, Alaska cedar, and sugar pine. Although close association of all these species is rare or nonexistent, the first 12 named commonly occur in the same drainage. The type is found most commonly on the upper slopes in the southern part of the county, but occurs on small areas in canyons and on north slopes within the pine zone.

Stands of the Douglas fir types in the county include 16,915 acres of old growth (type 7), 125 acres of large second growth (type 8), and 1,245 acres of small second growth (type 8A). These types occur chiefly on cool moist sites within or adjacent to the pine zone or between the upper slopes and the fir-mountain hemlock zone. Douglas fir constitutes about 65 percent of the stands by volume. The principal associate species are silver fir, noble fir, and hemlock at the higher elevations and lowland white fir, ponderosa pine, and western larch within the pine zone. Dense stands of medium-sized "yellow fir" are common at the higher altitudes; more open stands of coarse limby trees are common within the pine zone. Logging of these types has been limited to small operations for structural timber, fuel wood, posts, and corral poles.

Ponderosa Pine Types and Fir Types Less Than 12 Inches D.B.H.

The area occupied by timber of commercial species below sawtimber size is 73,325 acres, of which approximately 60 percent is pine types. The component stands range from 10 to 90 years in age and average about 65 percent of full stocking. Slightly more than 25 percent of these second-growth stands occurring principally along the borders of the pine zone are the result of logging; the remainder occurring chiefly in the fir zone are largely the result of fires. Approximately 94 percent of the logged areas have restocked with pine types.

Minor Forest Types

The area of lodgepole pine (types 25 and 26) amounts to 11,420 acres. It is limited to high altitudes and chiefly to the southwestern part of the county. The stands are dense, generally even-aged, and practically pure. On only 990 acres do the majority of the trees exceed 12 inches in breast-height diameter.

The subalpine forests (type 33) constitute 54 percent of the noncommercial forest area in the county. The type consists of sparse stands of scrubby whitebark pine, alpine fir, and lodgepole pine. It occurs at the upper limit of tree growth and has a high scenic and protective value.

Nonrestocked cut-over areas (type 35A) and deforested burns (type 37) total 7,720 acres. The former amount to 910 acres only. The deforested burns occur principally at high altitudes. They are now covered with ceanothus, huckleberry, cherry, and herbaceous vegetation and are slowly regenerating with tree species.

The prevalence of fire scars, particularly in the pine zone, indicates widespread occurrence of surface fires in the past. Although not devastating, these fires are among the primary causes of defect.

Of the woodland types, none except the oak types (type 4, 5, and 5B) occupy a significant area. The oak types are principally confined to the northern part of the county. Ponderosa pine, varying in age from seedlings to mature timber, generally occurs in these stands as a minor component. The woodlands are doubtless potential pine sites, on which the natural order of plant succession has been disturbed by fire. The oak rarely attains saw-timber size and is used chiefly for fuel.

Productive Capacity of Forest Land

The relative productive capacity of the forest land in the county is shown in table 4. The pine lands, which constitute about three-fourths of the total area, on an average grade as a poor site quality IV. The site index (height, in feet, of average tree of dominant stand at 100 years) for these lands averages 74, ranging from 51 to 112.

The fir lands likewise average a poor site quality IV; their Douglas fir site index averages 98. The yield at 100 years from fully stocked stands that corresponds with this site classification is approximately 22 M board feet, Scribner scale, per acre. For the best fir sites in the county the Douglas fir site index is 140 and the yield at 100 years from fully stocked stands is about 60 M board feet per acre.

Timber Volume

The total board-foot volume of timber in the county is 4,591,126 M feet, log scale, (table 1), of which all but 995 M feet is coniferous. Sixteen coniferous species are present. Volumes of the 8 principal species are shown in figure 2. Ponderosa pine and Douglas fir greatly predominate, composing 53 percent and 29 percent of the volume, respectively. Hemlocks (western and mountain), lowland white fir, noble fir, larch, and

western white pine are the principal secondary species, ranking in that order. The remaining 8 species compose less than 1 percent of the total volume.

National-forest land supports 54 percent of the total board-foot volume, Indian land 36 percent, and private land slightly less than 9 percent. All the volume in the county is now classed as available for cutting; doubtless some national-forest stumpage will ultimately be reserved for scenic and recreational purposes.

The volume of Oregon white oak and western juniper was determined in cords only; these species seldom attain satisfactory form for saw timber and are used principally for fuel and posts. The volume of oak is 40,232 cords and that of western juniper 890 cords. About 92 percent of the volume of these species occurs on private land.

Depletion From Cutting

Although forest exploitation has been an important factor in the development of Wasco County since early settlement, its chief purpose has been to supply local needs and there have been no extensive logging operations. Annual lumber production since 1925 has averaged about one million board feet, ranging from 733 M board feet in 1926 to 3,122 M board feet in 1934. During this period the number of active mills varied from 3 (in 1932) to 10 (in 1934). Three sawmills, including one of 50 M board feet daily capacity that is the largest in the county, are located at The Dalles. The remaining seven mills, all of less than 20 M board feet daily capacity, are located in the timber zone in the west-central part of the county. The entire log production is milled within the county. Some 2-inch plank, which is the principal product of the small mills, is trucked to other counties for remanufacture. Approximately 82 percent of the cut since 1925 was ponderosa pine, 16 percent Douglas fir, and less than 2 percent minor species--western white pine, western hemlock, and lowland white fir.

Most of the cut up to the present time has come from private lands, and from such lands alone the production of the past decade could be maintained for many years. Recent road developments on the national forest and Indian reservation have opened a large percentage of the timbered area to truck logging. Most of the old stands are badly in need of cultural treatment. Under proper management the county could maintain on a sustained basis an annual ponderosa pine cut of at least 25 million board feet.

Social Aspects and Forest Influences

Primary benefits from the forest land of Wasco County have been limited chiefly to supplying local needs for forest products. According to the Fifteenth Census, only 1.79 percent of the 5,303 persons gainfully

employed in the county in 1929 were engaged in forest or allied pursuits, and only 221 (1.35 percent) of the 12,646 inhabitants were dependent upon forest industries.

Secondary benefits from the forests, although not easily measured and frequently overlooked, are significant. Most of the streams, widely used for irrigation and to some extent for development of electrical energy, have their origin in the forests of the county; and without forest cover the rough western part of the county would be subject to excessive erosion.

FOREST STATISTICS FOR WASCO COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 1. VOLUME OF TIMBER BY SPECIES AND BY OWNERSHIP CLASS
DATA CORRECTED TO NOVEMBER 1, 1934

TREES 12" AND MORE IN D.B.H.
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

SURVEY SYMBOL	SPECIES[1]	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	INDIAN, TRIBAL AND TRUST ALLOTMENT	FEDERAL, AVAILABLE FOR CUTTING: PUBLIC DOMAIN	FEDERAL, AVAILABLE FOR CUTTING: NATIONAL FOREST	TOTAL
Y	PONDEROSA PINE	251,785	1,283	3,701	4,304	1,225,918	10,501	910,870	2,408,362
SP	SUGAR PINE					801		3,170	3,971
W	WESTERN WHITE PINE	520				2,164		44,653	47,337
LP	LODGEPOLE PINE	320				619		20,805	21,744
DF	DOUGLAS FIR	105,313	108	569	5,611	318,767	3,078	869,383	1,302,829
C	WESTERN RED CEDAR	4				57		5,199	5,260
YC	ALASKA CEDAR	8						434	442
IC	INCENSE CEDAR	338		62		13,412		399	14,211
H	WESTERN HEMLOCK	675				6,133		170,183	176,991
MH	MOUNTAIN HEMLOCK	520				27,658		54,503	82,681
WF	LOWLAND WHITE FIR	27,005		112	2,300	25,477	1,105	181,904	237,903
NF	NOBLE FIR	1,980				43,912		150,116	196,008
A	SILVER FIR					268		13,546	13,814
AF	ALPINE FIR	220						434	654
WL	WESTERN LARCH	1,189			535	7,968	60	58,231	67,983
ES	ENGELMANN SPRUCE	30				1,195		8,716	9,941
BC	NORTHERN BLACK COTTONWOOD	995							995
	TOTAL SAW TIMBER	390,902	1,391	4,444	12,750	1,674,349	14,744	2,492,546	4,591,126

1/ SPECIES NOT LISTED HERE THAT OCCUR IN THE COUNTY ARE (1) OREGON WHITE OAK AND WESTERN JUNIPER, VOLUMES OF WHICH WERE DETERMINED IN CORDS ONLY, AND (2) WHITEBARK PINE, KNOB-CONE PINE, ASPEN, ALDER, AND BIGLEAF MAPLE, WHICH OCCUR IN NEGLIGIBLE QUANTITIES ONLY.

FOREST STATISTICS FOR WASCO COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 2. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO NOVEMBER 1, 1934

SURVEY TYPE NO.	TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	INDIAN, TRIBAL AND TRUST ALLOTMENT	FEDERAL, AVAILABLE FOR CUTTING: PUBLIC DOMAIN	FEDERAL, AVAILABLE FOR CUTTING: NATIONAL FOREST	TOTAL
1/ 1	BARRENS, CITIES, AND UNMEANDERED WATER SURFACES							2,295	2,295
1/ 2	NONFOREST LAND: CULTIVATED, GRASS, SAGEBRUSH, ETC.							195	195
4	OAK: FOREST CONTAINING 60% OR MORE OF OAK	28,700	1,990	1,040	545		1,190	2,125	35,590
5A	DENSE JUNIPER: JUNIPER (OR MOUNTAIN MAHOGANY) FOREST OCCUPYING 10% OR MORE OF THE AREA	215							215
5B	SCATTERED JUNIPER: JUNIPER (OR MOUNTAIN MAHOGANY) FOREST OCCUPYING 5 TO 10% OF THE AREA	1,495					290	75	1,860
5½	PONDEROSA PINE WOODLAND: SCATTERED STANDS OF PONDEROSA PINE ON UNFAVORABLE SITES	25,300	630	200	70	13,265	2,045	4,050	45,560
20.5	PURE PONDEROSA PINE, LARGE: FOREST CONTAINING 80% OR MORE OF PONDEROSA PINE, MORE THAN 22" DBH	8,475		435	40	67,055	170	14,245	90,420
20	PONDEROSA PINE, LARGE: FOREST CONTAINING 50 TO 80% OF PONDEROSA PINE, MORE THAN 22" DBH	17,560	90	185	115	31,550	965	50,130	100,595
21	PONDEROSA PINE, SMALL: 12 TO 22" DBH	9,915	90	35		3,470	70	5,925	19,505
22	PONDEROSA PINE SEEDLINGS, SAPLINGS, AND POLES: LESS THAN 12" DBH	25,910	735	295	705	415	220	3,690	31,970
	PINE MIXTURE: MIXED FOREST CONTAINING 20 TO 50% OF PONDEROSA PINE								
27	PINE MIXTURE, LARGE: 12" OR MORE DBH	3,920			535	10,535	65	26,755	41,810
28	PINE MIXTURE, SMALL: LESS THAN 12" DBH	4,005	95	190	535	3,375	30	6,935	15,165
	DOUGLAS FIR: FOREST CONTAINING 60% OR MORE OF DOUGLAS FIR								
7	DOUGLAS FIR SMALL OLD GROWTH: 22 TO 40" DBH	660		5		4,695	5	11,550	16,915
8	DOUGLAS FIR LARGE SECOND GROWTH: 20 TO 40" DBH							125	125
9A	DOUGLAS FIR LARGE POLES: 12 TO 20" DBH	1,020	30				140	55	1,245
9B	DOUGLAS FIR SMALL POLES: 6 TO 10" DBH	1,875	5	45		95	10	1,640	3,670
10	DOUGLAS FIR SEEDLINGS AND SAPLINGS: LESS THAN 6" DBH	625					55		680
	WESTERN RED CEDAR: FOREST CONTAINING 40% OR MORE OF WESTERN RED CEDAR								
17	WESTERN RED CEDAR, LARGE: 24" OR MORE DBH							180	180
	FIR-MOUNTAIN HEMLOCK: FOREST CONTAINING 50% OR MORE OF NOBLE FIR, SILVER FIR, ALPINE FIR, OR MOUNTAIN HEMLOCK, OR OF ANY COMBINATION OF THESE SPECIES								
23	FIR-MOUNTAIN HEMLOCK, LARGE: 12" OR MORE DBH	220				7,375		24,295	31,890
24	FIR-MOUNTAIN HEMLOCK, SMALL: LESS THAN 12" DBH					5,265		5,810	11,075
	UPPER-SLOPE MIXTURE: MIXED FOREST OF DOUGLAS FIR, THE BALSAM FIRS, WESTERN LARCH, ENGELMANN SPRUCE, AND WHITE PINE, OR OF ANY COMBINATION OF THESE SPECIES								
27½	UPPER-SLOPE MIXTURE, LARGE: 12" OR MORE DBH	150				1,450		23,325	24,925
28½	UPPER-SLOPE MIXTURE, SMALL: LESS THAN 12" DBH					3,075		12,665	15,740
	WHITE FIR: FOREST CONTAINING 50% OR MORE OF WHITE FIR								
29	WHITE FIR, LARGE: 12" OR MORE DBH	130							130
	LODGEPOLE PINE: FOREST CONTAINING 50% OR MORE OF LODGEPOLE PINE								
25	LODGEPOLE PINE, LARGE: 12" OR MORE DBH	45						945	990
26	LODGEPOLE PINE, MEDIUM: 6 TO 10" DBH					7,705		2,725	10,430
	HARDWOODS: FOREST CONTAINING 50% OR MORE OF HARDWOODS								
31.5	HARDWOODS, LARGE: 12" OR MORE DBH	545							545
31	HARDWOODS, SMALL: LESS THAN 12" DBH	95							95
33	SUBALPINE: FOREST AT UPPER LIMITS OF TREE GROWTH, USUALLY UNMERCHANTABLE							1,070	1,070
	NONRESTOCKED CUTOVER: LOGGED AREA NOT SATISFACTORILY RESTOCKED AND NOT CARRYING A RESIDUAL STAND OF 1 M OR MORE PER ACRE								
35A	CUT SINCE BEGINNING OF 1920	290							290
	DEFORESTED AREA: NONRESTOCKED AREA DEFORESTED OTHERWISE THAN BY CUTTING								
37	DEFORESTED BURN	75				1,920		5,435	7,430
38	NONCOMMERCIAL ROCKY AREA	110					30	770	910
	TOTAL	131,335	3,665	2,430	2,545	161,245	5,285	207,010	513,515

1/ ACREAGES FOR THESE TYPES WERE COMPUTED FOR NATIONAL FOREST ONLY.

FOREST STATISTICS FOR WASCO COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 3. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO NOVEMBER 1, 1934

TYPE DEFINITION		PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	INDIAN, TRIBAL AND TRUST ALLOTMENT	FEDERAL, AVAILABLE FOR CUTTING: PUBLIC DOMAIN	FEDERAL, AVAILABLE FOR CUTTING: NATIONAL FOREST	TOTAL
NONFOREST LAND[1]									
SURVEY TYPES 1 AND 2								2,490	2,490
WOODLAND: OAK AND JUNIPER									
SURVEY TYPES 4, 5A, AND 5B		30,410	1,990	1,040	545		1,480	2,200	37,665
HARDWOODS: COTTONWOOD									
SURVEY TYPES 31 AND 31.5		640							640
PONDEROSA PINE 12" OR MORE DBH									
SURVEY TYPES 5½, 20.5, 20, 21, AND 27		65,170	810	855	760	125,875	3,315	101,080	297,865
PONDEROSA PINE LESS THAN 12" DBH	ON CUTOVER AREAS	18,670	270	80	525		5	1,550	21,100
SURVEY TYPES 22 AND 28	ON OLD BURNS	11,245	560	405	715	3,790	245	9,100	26,060
	TOTAL	29,915	830	485	1,240	3,790	250	10,650	47,160
CONIFERS 12" OR MORE DBH OTHER THAN PONDEROSA PINE AND LODGEPOLE PINE									
SURVEY TYPES 7, 8, 9A, 17, 23, 27½, AND 29		2,180	30	5		13,520	145	59,530	75,410
CONIFERS LESS THAN 12" DBH OTHER THAN	ON CUTOVER AREAS	980		35			35		1,050
PONDEROSA PINE AND LODGEPOLE PINE	ON OLD BURNS	1,520	5	10		8,435	30	20,115	30,115
SURVEY TYPES 9B, 10, 24, AND 28½	TOTAL	2,500	5	45		8,435	65	20,115	31,165
LODGEPOLE PINE 12" OR MORE DBH									
SURVEY TYPE 25		45						945	990
LODGEPOLE PINE LESS THAN 12" DBH									
SURVEY TYPES 26 AND 26A						7,705		2,725	10,430
NONCOMMERCIAL									
SURVEY TYPES 33 AND 38		110					30	1,840	1,980
NONSTOCKED CUTOVER AREAS AND DEFORESTED BURNS.									
SURVEY TYPES 35A AND 37		365				1,920		5,435	7,720
TOTAL		131,335	3,665	2,430	2,545	161,245	5,285	207,010	513,515

1/ ACREAGES FOR THESE TYPES WERE COMPUTED FOR NATIONAL FOREST ONLY.

FOREST STATISTICS FOR WASCO COUNTY, OREGON

FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 4. AREA OF FOREST LAND, BY SITE QUALITY

DATA CORRECTED TO NOVEMBER 1, 1934

TYPE	SITE QUALITY CLASS 1/		AREA			
				PERCENTAGE OF—		
			ACRES	CONIFEROUS FOREST LAND CLASSIFIED AS TO SITE QUALITY	TOTAL FOREST LAND 2/	TOTAL AREA OF COUNTY
PONDEROSA PINE, PONDEROSA PINE MIXTURE, SUGAR PINE MIXTURE, AND WHITE FIR	PONDEROSA PINE	II	483	0.1	0.1	
		III	49,230	10.7	9.6	3.3
		IV	159,876	34.8	31.3	10.7
		V	97,549	21.2	19.1	6.5
		VI	40,702	8.9	8.0	2.7
			347,840	75.7	68.1	23.2
DOUGLAS FIR, FIR-MOUNTAIN HEMLOCK, AND UPPER-SLOPE MIXTURE	DOUGLAS FIR	III	3,244	0.7	0.6	0.2
		IV	59,241	12.9	11.6	3.9
		V	48,995	10.7	9.6	3.3
			111,480	24.3	21.8	7.4
TOTAL			459,320	100.0	89.9	30.6
LODGEPOLE PINE			11,420		2.2	0.8
JUNIPER			2,075		0.4	0.1
NONCOMMERCIAL ROCKY AREAS			910		0.2	
SUBALPINE			1,070		0.2	0.1
OAK-MADRONE			35,590		7.0	2.4
HARDWOOD			640		0.1	
TOTAL			51,705		10.1	3.4
GRAND TOTAL			511,025		100.0	34.0

1/ THE "SITE QUALITY" OF A FOREST AREA IS ITS RELATIVE PRODUCTIVE CAPACITY, DETERMINED BY CLIMATIC, SOIL, TOPOGRAPHIC, AND OTHER FACTORS. THE INDEX OF SITE QUALITY IS THE AVERAGE HEIGHT OF THE DOMINANT STAND AT THE AGE OF 100 YEARS. SIX SITE QUALITY CLASSES ARE RECOGNIZED FOR PONDEROSA PINE AND FIVE FOR DOUGLAS FIR, CLASS I BEING IN EACH CASE THE HIGHEST. IN THE SURVEY THE PONDEROSA PINE AND DOUGLAS FIR CLASSIFICATIONS, RESPECTIVELY, WERE USED NOT ONLY FOR TYPES OF WHICH THESE SPECIES ARE CHARACTERISTIC COMPONENTS BUT FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.

2/ THE COUNTY HAS A TOTAL AREA OF 1,499,520 ACRES (OREGON BLUE BOOK), OF WHICH 511,025 ACRES (34 PERCENT) IS FOREST LAND AND 988,495 ACRES (66 PERCENT) IS NONFOREST LAND.

FOREST STATISTICS FOR WASCO COUNTY, OREGON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 2. DISTRIBUTION OF SAW-TIMBER VOLUME BY SPECIES, ALL OWNERSHIP CLASSES (FROM TABLE 1)

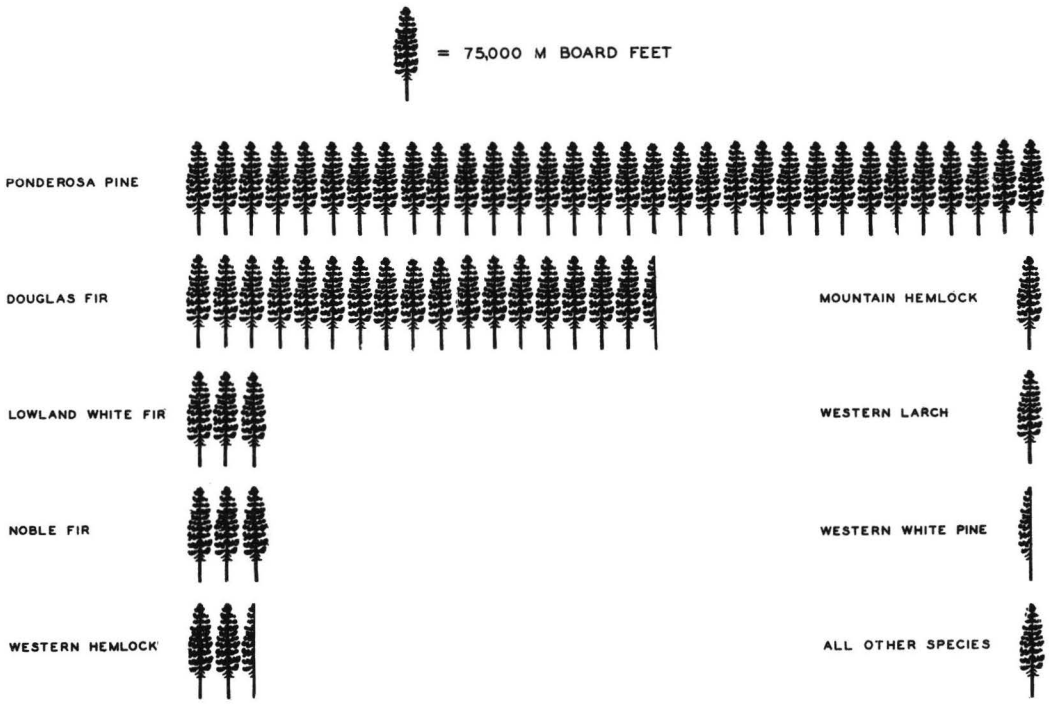

FIGURE 3. OWNERSHIP OF FOREST LAND (FROM TABLE 2)

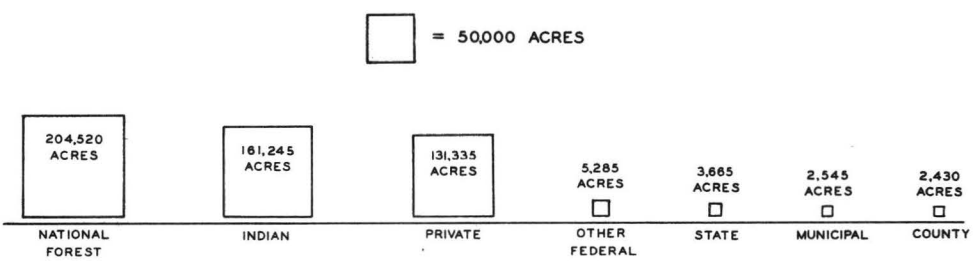

FIGURE 4. DISTRIBUTION OF COUNTY AREA BY GENERALIZED TYPES, ALL OWNERSHIP CLASSES (FROM TABLE 3)